



August 3, 2003

RESPONSE TO DETAILED ACTION

Commissioner for Patents

PO Box 1450

Alexandria, VA 22313-1450

Petition to examiner Wayne A. Langel.

Referring to Office Action Summary date mailed 07/25/ 2003, regarding patent application serial number 09/841,504, filed by Gene E. Lightner 04/24/2001, response to Office Action Summary.

Requirements of 35 U.S.C. 112, appropriate paragraphs, have been fulfilled.

Prior art presented, is immaterial to the present invention.

The fact that the present invention is both novel and unobvious to one skilled in the art has been accordingly established.

It is expected that, upon examination of these remarks and related response, the amended claims and specification page 1 and page 5 will be allowed by the examiner, as previous clean copies (4 pages) of the amended claims and amended specification have been sent.

Very respectfully,

Gene E. Lightner

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RESPONSE OFFICE ACTION SUMMARY

August 3, 2003

Petition to examiner Wayne A. Langel.

Referring to Office Action Summary date mailed 07/25/ 2003, regarding patent application serial number 09/841,504, filed by Gene E. Lightner 04/24/2001, response to Office Action Summary is enclosed in the form of paragraphs as arranged within said Office Action Summary

Pertaining to the applicant amendments filed 06/09/2003, these amendments are requested to be superseded or combined with the present disclosure.

In regard to the quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless--

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Conditions set forth in 35 U.S.C. 102(b) have been complied with

In regard to the following quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections as set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

As will be established, the present invention is both novel and unobvious, furthermore the situation designated within 35 U.S.C. 103(a) and section 202 is inapplicable to the present invention.

Regarding rejection of claims 1-15 under U.S.C 35 102(b) as anticipated by or in the alternative under U.S.C 35 103 (a) as obvious over Scott. The examiner submits the conclusion that hydrogasification of a biomass to produce high yields of methane is taught by Scott is applicable to the current case. Scott teaches within Figure 1 and claim 8., that steam supplied for the purpose of water gas shift reaction is required.

Whereas, within the present application, a gas containing water vapor and carbon monoxide is subjected to a steam shift reaction, so that a supply of steam is unnecessary. Hence a supply of steam with the object of a shift reaction is obviously lacking within the present application. Also Scott presents teachings within column 4 lines 54-57 and quoted as follows;

“ The process of the (present) invention allows biomass to be converted to either a methane-rich gas or a synthesis gas using no additional reactants except water, if insufficient water is present in the biomass feed.”

Consistently biomass feed contains water, and providing biomass of insufficient water followed by adding water or steam would be a senseless proposition by one of ordinary skilled in the art.

In any event the *prima facie* evidence, as pointed out by the examiner, is unclear for adding water to biomass, of insufficient water, to become an obvious occurrence. Thus the teachings of Scott presents an inappropriate approach which is recognized as unsuitable for the present application.

Within the present application, a method is disclosed to convert a gas containing water vapor, hydrocarbons and carbon monoxide to carbon dioxide and hydrogen. Furthermore said gas is derived from a biomass. Substantial differences between prior art of Scott is evident. Therefore, the situation within 35 U.S.C. 103(a) is immaterial to the present application.

Concerning rejection of claims 1-15 under 35 U.S.C. 103 (a), as being unpatentable over Yamaguchi, et al. in view of Scott. Teachings of Yamaguchi, et al. and Scott disclose methods to convert solid wastes into a town gas or hydrogasification of biomass within individual abstracts and individual independent claims, whereas the present application is devoid of teaching formation of a gas, rather a gas containing water vapor and carbon monoxide derived from a biomass, is the initial step of the method as claimed within independent claim 1. of said present application, as revealed within the abstract of said present application.

Pertaining to column 8, lines 33-68 presented by Yamaguchi, et al., said column begins at column 4, lines 3-9 and pertain to Fig 1, which presents production of (pyrolysis gases). Therefore column 8, lines 33-68 refers to Fig 1 as presented by Yamaguchi, et al., and relationship to formation of pyrolysis gases is established. Accordingly, formation of pyrolysis gases is unrelated to the present application. Thus *prima facie* obvious evidence within the teachings of Scott to employ a water gas shift reaction as presented by Yamaguchi, et al., offered by the examiner, is an approach well known and is to be considered obvious.

In reference to pyrolysis (gasification) of solid waste, as taught by Yamaguchi, et al. This process within claim 1, step (4), column 22, lines 37-38, claims “pyrolysis gas with the steam contained therein,” refers to water contained within the solid waste. Whereas Scott teaches the need for, or addition of, water within biomass prior to pyrolysis within column 4 lines 54-57.

Applying reasoning, of the examiner and conditions set forth in 35 U.S.C. 102(b), to teachings of Yamaguchi, et al., predating teachings of Scott, the consequence of these teachings anticipated by Scott is obvious.

As stated, within the Office Action Summary, claims 1-15 remain rejected and action is made final.

It is understood that a statutory period for reply to this final action is set to expire three months from the mailing date of this action.

Concerning this communication or earlier communication from the examiner, an inquiry is unforeseen at this time.